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ECTO-PARASITES OF THE DOG*

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Man in his attacks on the parasites of human beings has been remarkably successful and, during the last decade especially, many parasites previously considered beyond control gradually have been mastered.

One can think of such parasites as the scabies mite, lice and ticks which have been controlled in the major parts of the civilised world as a result of modern sanitary methods and the development of such insecticides as DDT and BHC.

The regular use of a bath helped to eliminate lice and regular shaving in men deprived many ecto-parasites of their cover; similarly the tick ceases to be a menace in human beings when normal body cleanliness is practised.

Parasites on animals live generally under much more favourable conditions. The proverbial shaggy dog gives plenty of cover for ecto-parasites, and the frequently unchanged kennel bed of the domestic pet allows ideal conditions for rapid increase in parasite populations, as the young emerging larvae do not have far to look for their new host.

Parasitology, like bacteriology, is a science which has had to develop step by step, depending as it does on the knowledge of each life cycle for its advance. The study of parasitology resembles the construction of a jig-saw puzzle: each section of the life cycle as it is discovered can be fitted into place.

Up to the middle of the 17th century knowledge of parasitology largely was limited to the recognition of very obvious parasites, such as lice, fleas and ticks, and such internal parasites as tapeworms, ascarids, and the guinea worm. These parasites were thought to be produced by the natural processes of the body in a similar way to warts and boils, and even to-day there are farmers and dog-breeders who consider that lice are produced spontaneously.

The introduction of experimental methods for the study of parasites soon led to the series of discoveries in the 19th century which clarified much of the parasite picture. At the same time as biologists were studying the life cycles of the parasites, other workers in the medical and veterinary fields were discovering the association between certain systemic diseases and parasites.

The work of Ross on the association between malaria and the mosquito, and that of Theobald Smith and Kilborne on the relation between piroplasmosis and the tick are well known. Following research on parasites and their rôle in disease, work on insecticides, anthelmintics and chemotherapeutic agents became more important.

The field of ecto-parasite control was revolutionised just before and during the last war by the discovery of the insecticidal value of DDT and BHC.

Progress in anthelmintic control was advanced rapidly by the discovery of the use of carbon tetrachloride for liver fluke, nicotine and copper sulphate and later phenothiazine for roundworms.

One of the earliest of the chemotherapeutic agents was quinine; its use in malaria was known as long ago as the 17th century. Drugs which have been discovered in the 20th century for the control of diseases spread by ecto-parasites are tartar emetic, acapron, mepacrine, paludrin, phenanthridium compounds and antrycide.

Another feature of parasite control that has to be remembered is the development of immunity by the animal body. All animals that survive the initial attack of a parasite eventually develop an immunity which assists them to resist further attacks. A very good example of this type of immunity is provided by comparing the effect of the sheep tick on a young lamb and its effect on the mother adult sheep. Sheep ticks may be found on young lambs within a few hours of birth and their presence causes an acute local skin reaction with inflammation, and frequently abscess formation as a result of the action of skin bacteria. The reaction may be so serious that the animal finds difficulty in walking, and the secondary bacterial infection eventually may cause death. On the other hand, sheep ticks may be found on adult sheep in numbers of up to 100 without any very marked skin reaction developing. The adult sheep has thus developed a skin immunity to ticks.

Before discussing the parasitic skin conditions of dogs and cats it is as well to consider the nature of parasitism.

In a sense we are all dependent on other organisms and animals to produce our food for us. Plants alone are capable of building up their body substance from sunlight and chemicals. One can compare the relationship between man and his milk cattle to that of the tapeworm or hook worm to its host.

In some ways the ecto-parasite is less ruthless than the carnivore in that it does not consider it a good policy to kill the host which provides it with food and shelter.

To ensure that each generation can carry on, most parasites have developed either a system of moving from host to host, or of providing their eggs or larvae with protective coverings which will enable them to survive off the body for some time.

Parasites vary very considerably in their degree of association with their host. The sheep tick, for instance, spends only about 21 days of its life cycle of three years on the host. Lice, on the other hand, live entirely on their host. Fleas leave their host to lay their eggs and can move readily from host to host. Some parasites are only parasites at one stage of their life cycle, *e.g.*, the bot fly.

In many ways lice and mange mites are in the final degrees of parasitism as they spend all their lives on the host and can move to another host only by direct contact.

To act as efficient parasites many insects have developed special physical features suited to their movements on their hosts. For example, the bodies of fleas are flattened to

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allow for easy movement amongst the hairs of their host, and the backward projecting spines also assist their passage through the dense hair. The clasping talons on the claws of lice are also useful.

An effective parasite adapts itself so that it does not become sufficiently intolerable to its host either to cause the destruction of the host, or for the animal to take too violent action against it. In well-established host-parasite relationships the host protects itself by producing antibodies which neutralise the poisonous or injurious products of the parasites, and by developing a quickened tissue reaction to deal with the damage caused by the parasites.

Immunity to parasitism is associated with age, and although the mechanism is not completely understood, experiments have shown that young animals do not seem to be able to produce antibodies or phagocytic cells in response to a parasite attack as rapidly as do adult animals.

A state of premunition often exists in host-parasite reactions and the parasite becomes active again only when the host's resistance is lowered by other diseases, etc. This type of reaction is readily recognised in piroplasmosis of cattle and horses, and malaria in human beings.

Acquired immunity to helminth infections has been demonstrated by many workers and without such a reaction it would be impossible for many domestic animals to live, especially under some of the intensive systems of husbandry.

A feature of both ecto- and endo-parasitism is host specificity. This is probably due to the fact that conditions on one species of animal are not exactly the same as those encountered on another type of host. An example of this host specificity is the warble fly. The warble fly larvae appear, by habit, to know their way through the bovine musculature, but should they find themselves in the tissues of another host the influences and stimuli seem to be wrong and the parasites wander aimlessly, ending up in all sorts of abnormal places.

The Effect of Parasitism on the Animal

The main effects produced by the bite of a parasite are redness and swelling of the skin with varying degrees of itching and pain, which result in continual restlessness.

The effects vary according to the parasite, but most blood-suckers act by the injection of an anticoagulant. The reaction of the body to arthropod bites appears mainly to be allergic, and it varies from animal to animal. It is possible, for instance, for lice and ticks to produce such reactions as urticaria, fever, body aches, etc., and it seems probable, therefore, that the unthriftiness seen in animals heavily infested with parasites may not be due entirely to loss of blood or local irritation.

Much experimental work has been done on the immunity reaction to ecto-parasites. It has been found that larval ticks previously fed on guinea-pigs become incapable of feeding on the animal and nymphs are unable to feed to repletion. Other work, however, has given another picture, as bed bugs (for instance) can be fed regularly on a rabbit without any feeding difficulties developing.

A form of repellency may also occur where lice will feed on one animal but not on another, and there is the case reported in America of a man who was lethal to attaching ticks.

These introductory remarks will, I hope, have demonstrated how important it is to have a full knowledge of a parasite's life cycle before deciding on the methods of treatment.

The main ecto-parasites of the dog are lice, fleas, mange mites (Sarcoptic, Otodectic and Demodectic) and ticks. Each one of these groups of parasites varies in its life cycle and will, therefore, require a different method of treatment.

Mites belong to the order Acarina and in the adult stage they have four pairs of legs.

The mites *Sarcoptes scabiei* are unusual in that the female burrows beneath the skin and lays its eggs in galleries. The complete life cycle from egg to egg usually takes between eight to 14 days. The activities of the mange mite have been studied most intensively in the human being, and Mellanby showed that the intense itching associated with mange does not develop until a month or so after the initial infestation, and after about 100 days the irritation becomes so great as to be almost unbearable. The infestation reaches its peak in about three months; by then the lesions will have become very marked and secondary infections may have developed. Unfortunately, some cases of mange irritation will persist for many days or weeks after the mites have been successfully killed. Diagnosis of mange should be made by deep scrapings as many of the mites will be found below the top layer of the skin.

The spread of mange is by means of contact between infected and healthy dogs and, generally speaking, the spread of infection from a mangy dog to a human being is not common, but as it can occur care should be practised in the handling of affected animals.

Treatment.—Where treatment is to be carried out, it should be remembered that the adult females and the eggs are situated below the surface of the skin so that to be successful the treatment will have to be carried out on at least two occasions with an interval of ten to 14 days between treatments. The most efficient of the modern insecticides for mange control, in my experience, is benzene hexachloride; the chemical should be applied in the form of a suspension and treatment should be repeated at ten to 14 days' interval. Should a solution or emulsion of BHC be used, care must be taken when large areas of skin have to be dressed, not to produce toxic symptoms as a result of absorption of the insecticide.

Ear Mange in Dogs and Cats

This condition is caused by *Otodectes cynotis*. The parasite resembles the chorioptic mite in physical characteristics and has a similar life cycle to *Psoroptes*. The parasite lives mainly in the ears of its host, although occasionally extending along the outside surface of the ear, and it lives by sucking lymph. This mode of feeding leads to irritation and the development of inflammatory areas inside the ear, with subsequent scab formation. The scratching and rubbing induced by the action of this parasite often leads, in cats, to a haematoma of the ear, and in dogs to inflamed areas on the outside of the ear as a result of the scratching action of the claws. When secondary abscesses develop as a result of the irritation caused by the parasites, the condition is frequently referred to as "ear canker." Ear canker will not invariably be associated with an initial Otodectic infection, but the majority of cases are undoubtedly associated with an earlier mite attack.

Where a diagnosis is to be made the mites can be identified by scrapings from the scabby area in the ear.

Treatment.—The ear should be thoroughly cleaned and scabs removed and the area treated with an insecticide. Benzene hexachloride again has proved very useful for this condition, as it has in most conditions caused by mange mites. In the case of cats care has to be exercised

in the use of emulsion dressings containing insecticides, as cats are very susceptible to insecticides and where a large area of damaged tissue is to be treated, absorption of the insecticide may take place and symptoms of acute excitement may follow.

Treatment should be repeated in seven to ten days to ensure the destruction of the second generation of mites.

Demodectic Mange

This clinical condition could be the subject of a talk in itself; I will confine myself, therefore, to the major points to be noticed in the condition. The clinical features are well known to all veterinary surgeons who handle dogs and the prevalence of the condition in the smooth-haired small breeds, such as Dachshunds, is well known.

The treatment and control of demodectic mange has proved very difficult because of (*a*) the difficulty of producing the disease artificially and (*b*) the gaps in our knowledge of the life history.

The mite is known to pass through egg, larval and three nymphal stages before reaching the adult, but it has never been completely proved that the mite confines itself to the skin and hair follicles and sebaceous glands, and does not migrate in the body. The latest work, however, does suggest that the presence of the mites in the lymphatic glands is largely accidental.

Unsworth (1946), who has written a very valuable study on canine demodectic mange, found that 94 per cent. of the cases he examined occurred in dogs about one year old.

In the majority of cases the head is the main area involved, the lesions occurring around the eyes, temple region and mouth. There is an occasional spread along the back and legs, but this is not common in the majority of cases.

The disease may take two forms: (*a*) squamous form and (*b*) pustular form. The pustular form develops as a result of a secondary infection of the original lesions, and staphylococci are the main organisms involved.

Unsworth carried out investigations on normal dogs to determine the incidence of the demodectic mite in these animals, and he found that a total of 10 per cent. of normal dogs carried this parasite.

The main lymphatic glands in which the demodectic mite may be found are the prescapular and the submaxillary, although mites have been recorded from several other glands in the body. It is suggested that the presence of the mites in the lymphatic system is purely a passive process.

The spread of the demodectic mite to young puppies is generally associated with a carrier bitch which passes the mite to the young puppies during the suckling period. Where this occurs the symptoms of demodectic mange may not show until after weaning, and the development of these symptoms is usually associated with an increase of susceptibility as a result of a debilitating disease, poor condition, or the natural susceptibility of a young animal to a parasite infestation.

Treatment.—At the moment there is not a drug which is as effective against the demodectic mange mite as one would wish, and treatment still will have to be varied according to the dog and the type of case. Rotenone dressings have given promise in many cases, and the incorporation of a bacteriocide with the insecticide seems a logical line of treatment.

Ticks

Ticks are found on dogs in this country from time to time and usually occur when the animals are running in long grass or heather and bracken. The following ticks can occur on dogs in this country: *Ixodes ricinus, Ixodes hexagonus, Ixodes canisuga* and *Haemaphysalis cinnabarina*. *Ixodes hexagonus* is essentially the hedgehog tick and will be found on dogs which have been rambling in the country or digging in holes where hedgehogs have been. *Ixodes canisuga* is the true dog tick of this country and can survive in ordinary dog kennels. It is found chiefly on sporting dogs, especially the types that are confined to kennels for a considerable proportion of each day. Ticks on dogs do not transmit any infection to these animals, but they will promote a certain amount of irritation, while their careless removal may cause a bad wound. A ticky dog should be either powdered or washed in a suitable insecticide. Such insecticides are derris, DDT and benzene hexachloride, although the use of DDT on dogs has not proved entirely satisfactory as it may induce a certain amount of excitability. Where fleas are present this excitability follows the use of DDT: probably it is associated with the increased activity of the fleas in their quickened movement around the dog as the result of the presence of the insecticide.

Fleas on Dogs

The flea *Ctenocephalides canis* is probably the commonest of parasites to be found on the dog and the response of individual animals to the flea varies very considerably. On the whole, long-haired dogs provide better cover for the flea, and thus usually carry larger flea populations than the short-haired varieties.

Fleas are much less permanent parasites than either lice or mange mites as frequently they leave their host. Unfed fleas do not live long in dry surroundings, but they may live several months in a humid environment, especially if there is debris in which they can hide.

Fleas are not host specific as are most of the other parasites, but frequently attack other species than their own particular host. They suck blood and can produce very irritating bites.

The female flea lays about 20 eggs and they are deposited in dust or dirt. The rate of development of the various stages of the flea depends, to a large extent, on temperature and humidity. The life cycle is accelerated greatly in warm, humid weather. The larvae of the flea have masticatory mouth parts and feed on dry blood, faeces, etc. Fleas will cause very considerable irritation to dogs; the animals will be continually rubbing and scratching, and their coats become rough. The susceptibility of dogs to fleas varies amazingly and if three animals are exposed to the same kind of infestation one animal may have only two or three fleas on its coat without showing any reaction at all, whereas the other two may have 30 to 40 or more fleas on them with considerable irritation and the development of an eczematous condition. It is also possible, however, for a dog with only three fleas on it to develop the eczematous rash which is so often associated with flea attack.

Treatment and Control.—Dogs affected with fleas should be dusted or washed with an insecticide and the treatment should be repeated in a week's time. It is also advisable to clean out the dog's house and the surrounds, dusting and treating with an insecticide dark corners where the fleas might hide.

The most suitable insecticides are derris and benzene hexachloride.

Lice

Dogs harbour two types of lice—biting and sucking. The lice live as permanent ecto-parasites, the females attaching their eggs to the hairs of the host; the young lice developing from these eggs appear as small reproductions of the adult.

The biting louse of the dog is *Trichodectes canis* and the sucking louse, *Linognathus setosus*.

Symptoms.—The biting, as well as the sucking, lice cause continual irritation which results in scratching, rubbing and biting. The dog's coat tends to become rough and shaggy and in places the hair may become matted together. The lice thrive more on the long-haired varieties of dog than on the short-haired, and eradication of a louse infestation always proves more difficult in the former.

Treatment.—The best method of treatment for the elimination of lice is by washing in an insecticide. For biting lice one treatment with benzene hexachloride or derris may prove sufficient, but for the sucking lice it is advisable to give at least two treatments at ten days' interval to ensure complete eradication of the infestation. The dog's house and surrounds should also be carefully cleaned out. Although lice do not live off the host for any time, it is always a good practice to clean the habitat of the animal.

As you will have seen from these life cycles, the parasites of dogs vary quite considerably in their mode of action, life history, and the type of damage they can do to the animal. It is only by a study of these life cycles that it is possible to decide the best form of treatment and the best intervals at which to apply it.

It is a good practice, in all animals which are reported to have been continually scratching and rubbing, to examine the animals for the early manifestations of a parasitic infestation. It is always easier to eliminate these infestations at the early stages. In the case of the tick and flea, it is important to remember that the source of infestation may be somewhere off the host and until this source is destroyed, re-infestation will be liable to occur. Parasitic infestations are always more serious in the young than the old animal as the young animal's skin is delicate and has little or no resistance to the bites of the parasites.

REFERENCE

UNSWORTH, K. (1946.) *J. comp. Path.* **56.** 114.

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DISCUSSION

The discussion was opened by Miss WELCH, who thanked Mr. Brander for the great interest of his paper and the accompanying film strips. She herself was particularly interested in the immunity problem mentioned and was convinced that there was not only a breed immunity but an individual immunity to parasitism. She thought that in the last few years there had been a definite decrease in the amount of sarcoptic mange presented to her and gave credit for this to the wide use of benzene hexachloride.

Referring to demodectic mange, she had been impressed by the sudden development of severe cases; it did not appear to start in a mild form, and she even wondered if there could be two different strains of parasite causing the two different types of the condition. She had noticed, also, that well-fed puppies were frequently affected and wondered if there was any trigger action which started off the condition.

Miss Welch mentioned two other parasites of seasonal incidence, the harvest mite and the red mite, which she thought might not always be diagnosed. She had seen a severe infestation of the former in cats and of red mite in the dog.

She wished to ask whether lice were, in fact, always host specific. She had encountered what she thought to be infestations of cattle lice on dogs which had lasted for several weeks and had also seen infestations of poultry lice on highland ponies.

Another question she wished to ask Mr. Brander was what part was played by fleas in the spread of tapeworm infestation in young puppies of four to five weeks old?

Mr. BRANDER, replying, said that the harvest mite was the larval stage of a member of the family *Trombidiidae*, and that in Jamaica he had seen heavy infestations appearing as red streaks across the heads of horses. The adult mite was harmless and fed on grasshopper eggs. Eggs were laid in soil or humus and the larvae were very small. The best treatment was bathing followed by a dusting with DDT.

He could not agree with Miss Welch that lice was not host specific. The poultry louse was adapted for feeding on avian tissues and he did not think it would be able to live for any length of time on mammals. Nor did he think that cattle lice would live for more than eight to ten hours on a dog.

Miss WELCH: In the case she had mentioned, many dogs in one road, which backed on to an area of cattle grazing, were infested with lice annually.

Mr. BRANDER thought that in this case the common source of infection was more likely to be from one dog.

In answer to Miss JOSHUA, who asked if lice could infest an area of ground temporarily, Mr. BRANDER said this was unlikely, as lice would live away from their hosts only for a day or two.

Miss BRANCKER: Was there any connection between allergy and demodectic mange? This seemed likely as some dogs, and indeed many humans, were not adversely affected by the parasite, and also as some cases responded well to treatment with antihistamines. She quoted the case of an infected dog which recovered spontaneously as soon as it was put into kennels, but in which the mange recurred on going home. Eventually it was found that this animal was running with sheep, and as soon as this was prevented no more mange occurred. Miss Brancker also asked how one could clear a vegetable garden that was infested with fleas, and, finally, what tapeworms were found in both dogs and children.

Mr. BRANDER: Demodectic mange was certainly associated with an allergic reaction. Some dogs' skin reactions were probably slower than others, and these could not throw off the condition. It had been found in the human eczema subject that even after treatment for as long as 15 years the condition might disappear, for no apparent reason, after treatment had stopped. He suggested that there might be some connection with the condition of the sebaceous glands, as it was found, for instance, that sheep which "sweated" most were more susceptible to maggot fly attack. In answer to Miss Brancker's second question, fleas could live under moist conditions for as long as three or four weeks without food, but they must have cover. Decaying matter should be removed from the garden and local areas of ground could be dusted with DDT.

Miss HOWELL suggested that covering a compost heap with soil would be as effective as removing it.

In reply to Miss Brancker's last question, Mr. BRANDER said that the tapeworm which could infest children and dogs was *Dipylidium caninum*. Replying to Miss Welch's question on tapeworms in puppies, he said that the infection (*i.e.*, *Dipylidium caninum*) could be carried only by fleas, as puppies of this age were too young to be infested from meat and therefore not likely to have been exposed to the danger of the other tapeworms.

Miss MILNES asked what was the safest insecticide to use on very young kittens and puppies? She had had considerable experience of demodectic mange in Staffordshire bull terriers. One bitch had been so severely affected that it was denuded over its entire body, one week after the mild infection had started. This bitch was eventually cured after 18 months' treatment and had since won prizes in the show ring. When bred from, she had had six puppies, two of which had no clinical symptoms, two had small lesions of mange and two were very badly infested. One of these badly infested puppies was cured and also used for breeding. She had four puppies and of these three were apparently quite free of the disease, whilst one was badly infested. This bitch was in very poor condition whilst suckling and again developed severe demodectic mange, but this cleared up when the bitch recovered in general health. From her experience, Miss Milnes said that she was sure that the mild and acute conditions were all the same disease. She was also certain that it was always possible to cure the condition clinically in short-haired breeds of dogs, if one persevered for a sufficiently long time.

Mr. BRANDER recommended the use of powdered derris for young puppies, but said that it was better not to use an insecticide on young kittens. Miss WOODS said that she had bathed four-week puppies in solutions containing derris without any ill-effect and Mr. BRANDER agreed that this was safe in 99 cases out of 100, but that one did meet the odd puppy having an idiosyncrasy to this agent.

Miss JOSHUA said that in Mrs. Cole-Powney's absence she would like to mention the latter's theory of the hereditary nature of demodectic mange, to which she herself also subscribed. Mrs. Cole-Powney had removed four puppies from a demodectic whelping bitch, and whilst still in their foetal membranes had put them on to a demodectic-free foster mother. All these four puppies developed demodectic mange, but a fifth puppy, which was kept with its own mother, remained relatively free; might this be explained by natural immunity? Proceeding, Miss Joshua said that she would wish for the use of the name follicular mange to be

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THE OCCURRENCE OF AGGLUTININS FOR *BR. ABORTUS* IN THE BLOOD OF WILD DEER IN THE SOUTH OF ENGLAND

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Evidence is accumulating to show that various species of free-living wild animals may be infected with brucellosis, and the majority of recorded cases have occurred in elk, bison and buffalo, principally in the National Parks of America (Katz, 1941). In this country, Bosworth (1937) isolated *Br. abortus* from a wild rat, but this appears to be the only record of this particular infection in a free-living wild animal in Britain. In a general study of the epidemiology of brucellosis, and the development of a control policy for the eventual elimination of contagious abortion, it is essential to know if natural reservoirs of infection exist in animals other than domestic cattle. An opportunity occurred to examine the blood sera of deer, and the results are recorded in this paper.

MATERIALS AND METHODS

Type of Deer Available.—A total of 80 deer of three different species were examined, *viz.*:—

Fallow (*Dama dama*).

Japanese (*Sika nippon*).

Roe (*Capreolus capreolus*).

These were obtained from seven different counties, namely, Berkshire, Wiltshire, Hampshire, Gloucestershire, Shropshire, Herefordshire, and Dorset.

Blood Samples.—With the kind co-operation of the Forestry Commission, Agricultural Executive Committees and local gamekeepers, it was arranged that during the winter months of two years, 1948-50, blood samples would be collected by personnel engaged in the shoots that are essential for the control of the deer population in densely wooded areas. Immediately a deer was shot, blood was collected from the jugular vein into McCartney bottles and the species, age (if known), sex, and place of killing recorded.

Agglutination Tests.—These were performed according to the standard technique for cattle, using the *Br. abortus* antigen of the Ministry of Agriculture.

RESULTS

The data relating to the origin of samples and the results obtained are shown in Table I. Of the 80 samples examined, eleven (13·8 per cent.) contained demonstrable agglutinins for *Br. abortus*. Of these eleven samples, five reacted at 1 : 40, four at 1 : 20, and two at 1 : 10. All were obtained from fallow and Japanese deer—none of the 17 samples from roe deer was found to be positive.

TABLE I

THE EXAMINATION OF BLOOD FROM WILD DEER FOR *Br. abortus* AGGLUTININS

Species	Deer No.	Source	Age	Sex	Agglutination titre N.	1 : 10	1 : 20	1 : 40	1 : 80
	1	Hampshire	2 yrs.	M.					
	2	,,	4 ,,	F.			+		
	3	,,	6 ,,	F.					
	4	,,	5 ,,	F.					
	5	,,	1 yr.	M.					
	6	,,	8 yrs.	F.					
	7	,,	1 yr.	F.					
	8	Shropshire	?	F.		+			
	9	,,	?	F.					
	10	,,	?	F.					
	11	,,	?	M.					
	12	,,	?	M.					
	13	,,	?	F.					
	14	,,	?	M.					
	15	,,	?	F.					
	16	,,	?	M.					
	17	,,	?	M.					
	18	,,	?	M.					
	19	,,	?	M.					
	20	,,	?	M.					
	21	Hampshire	9 mths.	M.					
	22	,,	5 yrs.	F.					
	23	Herefordshire	?	F.					
	24	,,	?	F.					+
	25	,,	1 yr.	M.					
	26	,,	?	F.					
	27	,,	?	F.				+	
	28	,,	?	M.					
FALLOW (*Dama dama*)	29	,,	?	M.					
	30	,,	Fawn	F.				+	
	31	,,	?	F.					
	32	,,	1 yr.	M.				+	
	33	,,	Young	F.					
	34	,,	,,	M.					
	35	,,	?	F.					+
	36	Hampshire	6 yrs.	M.					
	37	,,	7 ,,	M.					
	38	Berkshire	2 ,,	M.					
	39	Hampshire	4 ,,	M.					
	40	,,	1 yr.	F.					
	41	,,	4 yrs.	F.					
	42	,,	1 yr.	M.					
	43	Berkshire	2 yrs.	M.					
	44	,,	2 ,,	F.					
	45	Hampshire	10 ,,	M.					
	46	,,	8 ,,	M.					
	47	,,	4 ,,	F.					
	48	,,	2 ,,	F.					
	49	Dorset	?	M.					
	50	,,	?	F.					
	51	,,	?	?					
	52	Gloucestershire	2 yrs.	F.					
	53	,,	2 ,,	F.					
	54	,,	2 ,,	F.					
	55	,,	2 ,,	M.					
	56	Berkshire	3 ,,	F.					
	57	Gloucestershire	7 ,,	M.					
	58	,,	1 yr.	F.					

Summary of results: 51 negative, 1 at 1 : 10, 4 at 1 : 20, 2 at 1 : 40

discontinued, as it was very confusing, and she considered the condition was not purely a skin infection. She agreed that there might be some allergic connection, as she found that the disease commonly occurred in puppies at the time of the second dentition, which was a time of strain for the animals. She had had success in treating it with phenamidine: she used phenamidine in puppies when the condition was rapidly generalising and carried doses if necessary to the danger point. She was able to quote a spectacular cure in a pug and also described the treatment of a cocker and a Dachshund which were given phenamidine after they had been infected for a long time. In these cases the results were at first poor, but after six months the dogs were quite clear of demodex. Miss Joshua had also had experience of individual variability in susceptibility to parasitism.

Mr. BRANDER: Inherited immunity was not generally accepted as a possibility by parasitologists. In the instance quoted by Miss Joshua, the pup would have had to acquire its own immunity.

Species	Deer No.	Source	Age	Sex	Agglutination titre N.	1 : 10	1 : 20	1 : 40	1 : 80
	59	Hampshire	8 yrs.	M.					
	60	"	4 "	F.					
	61	"	3 "	F.					
	62	"	2 "	M.					
	63	"	11 "	M.					
	64	"	6 "	M.					
	65	"	2 "	M.					
Roe	66	"	2 "	M.					
(*C. capreolus*)	67	"	5 "	F.					
	68	"	2 "	F.					
	69	"	3 "	F.					
	70	"	4 "	M.					
	71	Dorset	?	M.					
	72	"	?	M.					
	73	"	?	F.					
	74	"	?	F.					
	75	"	?	?					
Summary of results : All negative.									
	76	Hampshire	7 yrs.	M.					+
Japanese	77	"	2 "	F.					+
(*Sika nippon*)	78	Dorset	5 "	M.					
	79	"	?	F.					+
	80	"	?	F.		+			
Summary of results : 1 negative, 1 at 1 : 10, 3 at 1 : 40.									

Discussion

If the significance of agglutination titres occurring in the blood of deer can be interpreted in the same way as in cattle, then this preliminary survey would indicate the occurrence of *Br. abortus* infection in five out of 80 deer. Four would be classified as doubtful reactors and 71 as negative. The absence of 1 : 10 reactors, apart from two cases, is somewhat contrary to the usual findings in cattle living in an abortion-free herd where the proportion of 1 : 10 reactors is seldom below 9 per cent. (McDiarmid, unpublished observations). Moreover, it is interesting to compare the present results with those of Taylor (1939), who examined the blood of farm horses in Scotland for *Br. abortus* agglutinins. Of the 957 sera which he examined, 19·6 per cent. reacted at 1 : 10, 2·1 per cent. at 1 : 20, and 1·2 per cent. a 1 : 40. In the present work the corresponding figures for 80 sera examined were: 2·5 per cent. at 1 : 10, 5·0 per cent. at 1 : 20, and 6·3 per cent. at 1 : 40. It is interesting to note that, so far, no reactors have been detected in roe deer. This species is a true British wild mammal, whereas most of the fallow and all the Japanese deer now breeding in the Forestry plantations probably originated from stock escaped from deer parks. Moreover, the retiring habits of roe tend to segregate them from domestic animals and consequently from sources of infection to a greater extent than the other two species.

It is unfortunate that circumstances would not permit the cultural and biological examination of tissues from the reactors, but it is hoped that, in future work, material will be available for this purpose.

Summary

Eighty blood samples from three species of wild deer in the South of England were examined for *Br. abortus* agglutinins; five reacted at 1 : 40, four at 1 : 20, and two at 1 : 10.

References

Bosworth, T. J. (1937.) *J. comp. Path.* **50.** 345.
Katz, J. S. (1941.) *J. Amer. vet. med. Ass.* **99.** 24.
Taylor, A. W. (1939.) *J. comp. Path.* **52.** 140.

CLINICAL COMMUNICATION

A CASE OF RECENT UTERINE RUPTURE IN A CAT

G. T. WILKINSON,
Norwich

This case may prove of interest in relation to the question of the occurrence of true extra-uterine pregnancy in the cat.

Subject.—An eight-year-old black and white farm queen.

History.—Four days before professional advice was sought the animal, apparently very close to full-term pregnancy, was " worried " by a dog, the latter seizing her across the abdomen and shaking her violently. Very soon after this incident parturition commenced and two kittens were delivered normally within a short space of time, the second one being stillborn. No further kittens were born and no more straining efforts were made, but during the succeeding four days the animal was off its food, listless and resented being handled, although normally having an affectionate nature.

Examination.—This showed a rather toxic animal with a purulent and somewhat offensive vaginal discharge. Abdominal palpation was actively resented, but two foetuses could be distinguished. A diagnosis of foetal death with subsequent putrefactive changes and a consequent metritis was made and surgical intervention was advised, rather as a last resort.

Operation.—The cat was anaesthetised by nembutal intravenously, only two-thirds of the computed dose being necessary to produce fairly deep surgical anaesthesia.

A mid-line incision was made and immediately on opening the abdominal cavity an offensive purulent fluid escaped. Extension of the incision exposed a putrefying kitten, complete in amniotic sac, lying free in the abdominal cavity. This was brought out through the incision and it was found that the placenta was quite firmly attached to the gastric omentum. The attachment was separated gently, revealing the union to be apparently of granulation tissue. Digital exploration of the abdominal cavity produced another putrefying kitten, this one being free from its membranes and with the placenta attached to the descending colon. Again, gentle separation of the placenta left an angry-looking area of granulation on the mesenteric surface of the bowel.

The uterus was then sought for and, when found, showed a small perforation in the right-hand cornu. Involution had proceeded to a stage consistent with a post-partum period of four days. Complete ovaro-hysterectomy was performed, the abdominal cavity swabbed out as completely as possible and three tubes of intramammary penicillin were squeezed into the cavity. The incision was then closed in the usual way.

The prognosis was very unfavourable in view of the widespread peritonitis discovered, but recovery was uneventful, 100,000 units of penicillin being administered daily for the four days after operation.

Discussion.—The case is of interest in that it illustrates the resistance of the cat to such an internal disaster as uterine rupture, even with a super-imposed infection and peritonitis. The facile manner in which the placentae of the kittens had established union with neighbouring viscera makes one wonder whether extra-uterine pregnancy does occur in the cat or whether all cases reported as such are, in fact, consequent upon uterine rupture. If surgical intervention had not been forthcoming in this case, especially

if there had been no infection to complicate the picture, quite possibly the cat would have survived. If, later, the animal had come to the *post-mortem* table, one would have been presented with an apparent case of extra-uterine pregnancy with placental areas on the gastric omentum and the colon. Without doubt it would have been almost impossible to locate the cornual perforation in the fully involuted pencil-thin uterus.

SUMMARY

A case of recent rupture of the uterus in an eight-year-old cat, revealed at operation, is recorded.

The interest of the case in relation to the occurrence of extra-uterine pregnancy in the cat is discussed briefly.

QUESTIONS AND ANSWERS

The submission of questions for inclusion in this column will be welcomed: they can relate to any aspect of veterinary work. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address. It is regretted that consideration cannot be given to questions for which solely a private reply is required.

Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.

All communications should be addressed to the Editor.

Sodium Iodide in Treatment of Actinomycosis

Q. 394.—*Is sodium iodide effective against actinomycosis in all parts of the body? Does the route of injection—intravenous or subcutaneous—affect the efficacy of the drug? For subcutaneous injection, which is to be preferred—flutter valve or pump? Please give reasons. Particulars as to dosage and intervals between injections would also be appreciated.*

A.—The term "Actinomycosis" should be used only in connection with the affections of hard tissue, such as bone, in cattle caused by the *Actinomyces bovis*. Against this infection the iodides have only a very limited use and while they may impede the progress of the disease they seldom, if ever, effect a cure.

Against actinobacillosis due to the *Actinobacillus lignierisi*, affecting chiefly the softer structures, including the tongue, the soft palate, the glands of the head region, the skin, the lungs, stomach walls and peritoneum, iodides are, to a large extent, successful. Solutions of sodium iodide, if for injection, must be administered intravenously, as even in weak solution it is so irritant as to produce large painful swellings and even sloughs. The question as to the comparative efficacy of routes of administration does not, therefore, arise.

The flutter valve apparatus is more suitable than a pump or syringe, as it allows the injection to be made fairly slowly. Slow injection is preferable to rapid injection as the latter sometimes leads to heart embarrassment. For an adult beast of the larger dairy breeds, such as Shorthorns and Friesians, a dose of 1½ to 2 oz. of sodium iodide dissolved in 16 to 20 oz. of sterile water at blood heat is suitable. Treatment should be at fortnightly intervals. It is rarely necessary to give more than two doses to effect a cure, though occasionally three doses may have to be given. An alternative method of treatment is to give an initial intravenous injection of sodium iodide solution as described, followed by twice daily oral administration of 2 drams of potassium iodide together with 5 to 10 grains of biniodide of mercury dissolved together in ½ pint of cold water. During the treatment signs of iodism, such as scurfiness of the skin and catarrhal discharge from the nostrils, occasionally may occur, when treatment may be temporarily suspended.

A note of warning should be sounded about the use of solutions of sodium iodide intravenously in the pregnant cow. There is good reason for believing that full doses may cause abortion. It is probably wiser in such a case to give not more than 1 oz. of the salt intravenously, and follow with supporting dosage by the mouth.

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Hysterical Self-biting at Mealtime (Gordon Setter)

Q. 395.—*A Gordon Setter, six years old, no history of previous illness, every evening following his meal starts by biting his feet and then his tail, rounding in circles, and then biting his hocks, working himself into a state bordering on hysteria; this sequence will last about five minutes, when the dog recovers quickly.*

Is this a psychological state or has it been observed as indicating some condition?

A.—The sequence of events as described to the questioner seems likely to have some psychological significance. Possibly changing the time and/or place of feeding might be effective.

The only physical conditions of which the respondent can think as even being possibly connected with these manifestations would be anal gland irritation or the presence of the vesicular eruptions on the penis or in the rectum recently described in the correspondence columns of *The Veterinary Record* by Builder, Freak and Joshua. It is appreciated that neither of these entirely "fills the bill."

. . . . .

Umbilical Swelling in Female Pigs

Q. 396.—*I should appreciate your views as to the cause of young female pigs getting very swollen at the navel. Some die, and those that survive do not thrive. As I have had no opportunity to make a* post-mortem *examination, I regret that I have no further information to give.*

A.—A reasonably helpful reply to this question could be given only if information were forthcoming on the following points: (1) Age of pigs affected; (2) Appearance of the swelling and its size; (3) Are hog pigs also affected?; (4) Do cases which die, die suddenly?; (5) *Post-mortem* findings. Under these circumstances, the respondent would add only that the condition may be an ordinary umbilical hernia which is not uncommon in pigs and which is generally considered to be an inherited condition transmissible by both the boar and the sow. On the other hand, if the pigs are only youngsters, it may be a case of umbilical infection.

The Calving Cow Calling.—A 'phone for the cow is the latest electric gadget. Stand exhibits at the Bath and West Show at Dorchester included a device, exhibited by the Wolseley Sheep Shearing Machine Co., Ltd., consisting of a microphone, an amplifier, and a loud-speaker. The microphone is fitted above a standing in the byre where the cow is expected to calve. When she is in labour her vocal signals are transmitted to the sitting-room or bedside of her owner or her stockman. Thus, it is claimed, many long, tiring hours of waiting in the cowshed may be avoided.—*Farming News.*

* * * * *

Low Temperature Glycerol Preservation of Spermatozoa and Red Blood Cells.—Visitors to the Royal Society's conversazione at Burlington House on May 24th were shown a film which examined the preservation, by means of glycerol, of fowl spermatozoa and the red blood cells of rabbits at temperatures far below 0° C. When the temperature was raised again they were found to be still active. It is thought that these experiments, carried out at the National Institute for Medical Research by Mr. C. Polge, Mr. J. Smiles, and Dr. A. U. Smith, may, by making it possible to keep material alive for long periods, produce results of much value in blood transfusion and artificial insemination among farm animals.

ABSTRACT

[Antibiotics for Digestive Disturbances in Young Pigs. Whitehair, C. R., Heidebrecht, A. A., & Ross, O. B. (1951.) *Vet. Med.* **46.** 81–83.]

Crystalline aureomycin is an important constituent of the Lederle APF supplement fed to pigs. Added to a corn-peanut meal ration containing minerals and all the vitamins known to be required for the pig, the growth rate was improved approximately 2·5 times. The most remarkable growth stimulation following antibiotic feeding has been noted in unthrifty pigs, where the improvement has been as much as 100 per cent. Even in apparently healthy and well-fed pigs a growth improvement of from 5 to 10 per cent. has been found.

The beneficial effects of the sulphonamide drugs upon digestive disturbances in pigs already are well known. In this experiment 48 unthrifty pigs weighing from 15½ to 50 lb., and affected with diarrhoea, were divided into eight lots according to age, weight and physical condition. All were first treated with benzene hexachloride for mange and lice control. The pigs were fed a dry ration, but all had access to automatic waterers. The ration fed consisted of the following ingredients :—

Ground yellow corn	69·5	per cent.
Expeller soya-bean meal ...	7·0	,,
Tankage (60 per cent. protein) ...	10·0	,,
Fish meal	2·0	,,
Cottonseed meal	5·0	,,
Alfalfa leaf meal	5·0	,,
Trace mineralised salt (Barton's)	0·5	,,
Steamed bone meal	1·0	,,
	100·0	,,

The first lot of pigs was fed this ration and acted as controls. The remaining lots received the following, in addition : (2) 2·5 grammes aureomycin ; (3) 2·5 grammes streptomycin ; (4) 1·25 grammes procaine penicillin " G " ; (5) 0·75 gramme procaine penicillin " G " plus 0·625 mg. vitamin B_{12}—all these per 100 lb. feed ; (6) 1·4 per cent. Lederle's APF No. 5 containing vitamin B_{12} and aureomycin ; (7) 0·2 per cent. sulphathalidine, and (8) only the basic ration fermented in wooden barrels at atmospheric temperature for 36 hours.

Deaths were high in the controls and No. 8 lot, whilst in the other lots of pigs what deaths there were took placé early in the experiment before the antibiotics had taken effect, and where the animals had not commenced to feed.

The pigs regularly fed on the antibiotics soon overcame the enteritis, and responded with a marked increase in the rate of gain and vigour. The hair and coat improved as did the general appearance. In feeding experiments on healthy pigs, those fed the APF supplement (containing vitamin B_{12} and aureomycin) gained 1·75 lb. daily as compared with the unsupplemented pigs' gain of 1·54 lb. daily.

Streptomycin given orally in doses of 1 to 1·5 grammes per pig has been found beneficial in controlling some forms of swine dysentery. In such cases the streptomycin should be given in a little water *via* doser or dose-syringe. It is not so reliable if given in the food, as the pig's appetite is markedly affected by the dysenteric disturbance. The same remark also applies to the other antibiotics, but where digestive disturbances assume a chronic-endemic course in the pig herd, then drugs such as aureomycin, streptomycin, penicillin and sulphathalidine may be given in the feed.

D. J. A.

ROYAL COLLEGE OF VETERINARY SURGEONS

MEMBERSHIP EXAMINATIONS, JUNE/JULY, 1951

List of Successful Candidates

Liverpool:

THIRD EXAMINATION (*Revised Syllabus*)

Awad, F. I. (Pathology only)
Davies, G. P. (Pathology only)
Jones, R. A. (Pathology only)
Wright, G. W. (Pathology only)
Kiernan, N. S. (Hygiene only)

FINAL EXAMINATION (*Old Syllabus*)

Roberts, Miss E. G.
Westcott, E. V.

FINAL EXAMINATION (*Revised Syllabus*)

Boyt, W. P.
Clarke, P. B.
Edwards, D. K.
Evans, A. N. (S)
Fairhead, A. C. W.
Gunner, D. E.
Hudson, J. H.
Hughes, P. A.
Johnson, R. H.
Jones, E. H. (S)
Kenworthy, R.
Leach, S.
Lucas, J. M. S.
Meredith, F. W.
Pryce, R. L.
Randle, P. O.
Steele, Colin
Vaughan, K. L.
Woods, A. J. E.

(S) denotes credit in Surgery.

(To be continued)

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LIVERPOOL UNIVERSITY FACULTY OF VETERINARY SCIENCE

DEGREE EXAMINATIONS, JUNE, 1951

List of Successful Candidates

DEGREE OF M.V.Sc.

K. B. Sinclair

SECOND EXAMINATION

Part III

Farrer, J. S.
Hayes, B. W.

THIRD EXAMINATION

Part II

Adams, H. S.
Bailey, Elizabeth J.
Benson, J. A.
Booth, F. R.
Bowen, D. T. E.
Crowley, A. J.
Davies, O.
Harding, J. D. J.
Morgan, T. D.
Morris, J. E.
Mortimer, P. H.
Phillips, G. D.
Pyke, B. N.
Wakeem, A. A.
Wilson, R.

FIRST EXAMINATION

Part I (Chemistry)

Copley, D. J.
Edwards, B. F.
Featherstone, P.
Telesford, F. L.
Thake, G.
Walters, T. M. H.

Part II (Physics)

Boyd, R. W.
Chandler, N.
Copley, J. D.
Glaister, A. I. E.
Gleave, P.
Hudson, G.
Smith, M. W.
Telesford, F. L.
Walters, T. M. H.

Part III (Biology)

Adams, D. V. M.
Barraclough, A. B.
Boyd, R. W.
Butler, Eileen J. M.
Chandler, N.
Copley, J. D.
Dunwell, R. S.
Edwards, B. F.
Evans, R. K.
Featherstone, P.
Glaister, A. I. E.
Gleave, P.
Greenwood, J.
Holland, G.
Hudson, G.
Lowe, A. D.
O'Malley, Mary C. B.
Potts, R. R.
Sanford, J.
Scambler, J. D.
Stevenson, D. E.
Telesford, F. L.
Wallis, A. S.
Walters, T. M. H.
Wheeler, A. J.
Williams, Rosemary J.
Wright, C. L.

QUESTIONS IN PARLIAMENT

Slaughterhouses (Inspection and Control)

Mrs. Ganley (July 2nd) asked the Prime Minister whether he will initiate consideration of one Department being made responsible for the inspection and control of slaughterhouses for horses as well as other animals throughout the country.

The Prime Minister: I think this question must await the outcome of the consideration now being given to the long-term arrangements for the slaughter of home produced livestock. In this connection the Ministry of Food and the Ministry of Agriculture are having discussions with the interests concerned.

Colonel Gomme-Duncan: Are discussions going on with the Secretary of State for Scotland on the same point?

The Prime Minister: Yes, Sir.

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Police Officers, London (Treatment of Animals)

Mr. Peter Freeman (June 14th) asked the Secretary of State for the Home Department what steps are taken to give instructions to officers of the Metropolitan Police in the care and treatment of animals, in view of the heavy duties which fall on them in this connection.

Mr. Ede: I am informed by the Commissioner of Police that Metropolitan police officers are instructed in the general law relating to animals and the steps they should take to get the best and quickest expert treatment for injured or sick animals in public places.

Mr. Freeman: While appreciating the excellent work they are doing, might I ask my right hon. Friend to allow representatives of organisations such as the R.S.P.C.A. to give occasional talks to these officers on both the legal and humanitarian aspects?

Mr. Ede: The officers are given appropriate training in this when they go to training centres on recruitment. The very closest liaison and co-operation exists between the police and the R.S.P.C.A., and I am quite sure that anything that can be done for their mutual benefit will always be welcomed.

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Foot-and-Mouth Disease (Film Strips)

Mr. Percy Wells (July 5th) asked the Minister of Agriculture if, in view of the representations made to him by the National Farmers' Union, he will reconsider his decision not to proceed with the preparation of film strips showing the precautions to be taken in preventing outbreaks of foot-and-mouth disease.

Mr. Champion: This suggestion has been carefully considered, but I am advised that the subject is not very suitable for treatment by means of film strips. Adequate publicity has been and will be given to this matter in other ways.

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Raw Bone Meal (Imports)

Mr. P. Wells (July 5th) asked the Minister of Agriculture if, in view of the evidence that anthrax has been introduced into this country by raw bone meal produced from sun-dried bones, he will stop its importation.

Mr. Champion: No, Sir. To prohibit the importation of raw bone meal would mean depriving farmers of considerable quantities of an important organic fertiliser and I do not think the risk of disease justifies this in present circumstances.

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Gin Traps

Mr. Russell (July 5th) asked the Minister of Agriculture what steps he proposes to take to implement the recommendation in the Report of the Committee on Cruelty to Wild Animals, that the use of the gin trap should be banned by law in this country and that he should approve for use only traps which will catch and kill animals without causing unnecessary suffering.

Mr. Champion: The recommendation is being considered in consultation with the interests mainly concerned.

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Poultry Feeding-stuffs (Allocation)

Mr. Crouch (July 5th) asked the Minister of Agriculture if he can now make a statement with regard to the discontinuance of allocating feeding-stuffs for poultry on the 1939 basis.

Brigadier Medlicott asked the Minister of Agriculture if he is aware of the increasing dissatisfaction and injustice caused by the retention of the 1939 position as the basis for the allocation of poultry feeding-stuffs; and if he is now prepared to revise the arrangements so as to bring them into line with present-day needs.

Mr. Champion: No, Sir, I have nothing to add to the reply my right hon. Friend gave to the hon. Member for Dorset North (Mr. Crouch) on February 8th last.

Mr. Crouch: Is the hon. Gentleman aware that there have been great changes in occupation since 1939 and that a great number of the new occupiers of agricultural holdings are ex-Servicemen who are anxious to go in for egg production? If the hon. Gentleman wou'd consult the Minister of Food he would find that his right hon. Friend would very much appreciate an increased supply of eggs.

Mr. Champion: We recognise that, but the difficulty is to devise ways of avoiding hardship to many old-established producers. We have consulted the Ministry's advisory committee about this on many occasions.

NOTES AND NEWS

Diary of Events

July 17th.—Summer Meeting of Mid-West Division, N.V.M.A., at the Zoo, Clifton, Bristol, 2.15 p.m.

July 19th.—Meeting of Association of Veterinary Teachers and Research Workers (Southern Region) at Bristol University, School of Veterinary Science, 9.45 a.m.

July 20th.—Summer Meeting of Royal Counties Division, N.V.M.A. (See Notice.)

July 20th.—Summer Meeting of Eastern Counties Division, N.V.M.A., at Newmarket. (See Notice.)

July 20th.—Meeting of the Sussex Division, N.V.M.A., at Brighton (The Old Ship Hotel), 2.30 p.m.

July 21st.—Meeting of the Biochemical Society, in the Department of Biochemistry, University of Sheffield, 10.30 a.m.

July 25th.—Summer Meeting of the Lancashire Division, N.V.M.A., at the A.I. Centre, Tilston, Tarporley, at 2.30 p.m., after an informal lunch in Chester at 12.45 p.m.

July 25th.—Meeting of the Editorial Executive, N.V.M.A., 2.30 p.m. (*Members please note alteration from second to fourth Wednesday, for this month only.*)

July 25th.—Summer Meeting of the Lancashire Division, N.V.M.A., at the A.I. Centre, Tilstone Fearnall, Tarporley, 2.30 p.m.

July 27th.—Meeting of the Yorkshire Division, N.V.M.A., at Harrogate.

Sept. 23rd-29th.—Sixty-ninth Annual General Meeting and Congress of the National Veterinary Medical Association, at Eastbourne.

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PERSONAL

Professorial Appointments in Glasgow University Veterinary School

Members of the profession will learn with much pleasure that as the Ordinances creating the new Chairs have received the approval of His Majesty in Council, Glasgow University Court have made the following appointments:—

To the Chair of Veterinary Surgery—Mr. William L. Weipers, M.R.C.V.S., D.V.S.M., since 1949 Director of Veterinary Education in the University.

To the Chair of Veterinary Pathology—Mr. John W. Emslie, B.SC., M.R.C.V.S., formerly Head of the Department of Veterinary Pathology in the Veterinary College, and since 1949 Head of the University Department.

Professor W. L. Weipers, M.R.C.V.S., D.V.S.M.

William Lee Weipers was born in 1904 and received his education at Whitehill School, Dennistoun. After graduating at the Glasgow Veterinary College in 1925 he went as assistant to that eminent cattle practitioner David Imrie. He then secured a post in the Clinical Department of the Royal (Dick) Veterinary College. Private practice in Glasgow from 1929 preceded his appointment in 1949 as Director of Studies in the University of Glasgow Veterinary School.

Professor Weipers is one of the representatives of the University of Glasgow on the Council of the Royal College of Veterinary Surgeons, while he has rendered sterling service to the N.V.M.A., notably as Chairman of the Organising Committee.

Professor J. W. Emslie, B.Sc. (Agric.) (Aber.), M.R.C.V.S.

John William Emslie, who was born in 1901, after education at Robert Gordon's College, Aberdeen, and the University of Aberdeen, graduated from the Royal (Dick) Veterinary College, Edinburgh, in 1926. After a short experience in general practice he was appointed Senior Assistant in the Department of Pathology at the "Dick" College, being engaged in pathological work and teaching for 13 years. In 1929 came the Professorship in Animal Pathology in Glasgow Veterinary College; since 1949 he has been Head of the University Department.

Professor Emslie, also, is a valued member of the Council of the Royal College, to which he was first elected in 1948, securing re-election on his retirement in 1950.

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M.Sc. Degree for Mr. John Francis.—The University of London degree of M.Sc. in Veterinary Science has been awarded to Mr. John Francis, B.Sc. (Lond.), M.R.C.V.S., of Imperial Chemical (Pharmaceuticals) Ltd., Wilmslow, Cheshire.

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Birth.—Alexander.—On July 2nd, 1951, to Mary (*née* Purkis), wife of F. C. Alexander, Frensham House, New Street, Honiton, Devon—a sister for Robert and Susan.

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Eire Veterinarians' Tour in the U.S.A.—We learn that Mr. J. D. O'Connor, M.R.C.V.S., Lecturer in Animal Husbandry at the Veterinary College of Ireland, left on June 4th last for a tour of four months in U.S.A., under the E.C.A. Programme, for the purpose of enquiring into conditions in that country in regard to problems in nutrition and genetics. He is accompanied by Mr. L. B. O'Moore, M.Sc., Ph.D., M.R.C.V.S., from the Veterinary Research Laboratory of the Department of Agriculture, Dublin, and also by an Agriculturist from that Department.

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Mr. D. D. Ogilvie to Visit North America and Canada.—We learn with interest that Mr. D. D. Ogilvie, B.Sc., M.R.C.V.S., of Imperial Chemical Industries, Ltd., Wilmslow, has been invited by the American Veterinary Medical Association to attend their 87th Convention at Milwaukee, Wisconsin, from August 20th to 23rd, where he will be contributing to the proceedings and showing films. On August 31st to September 2nd he will be attending the Saskatchewan Veterinary Conference at Saskatoon in Canada, where he is to give an address and also be the guest speaker at the annual dinner. Later in the month Mr. Ogilvie will participate in the All-Canada Veterinary Congress at Banff, Alberta. During these visits he hopes to describe some recent achievements of British research and development in relation to animal industry and to hear something of the present position of outstanding American and Canadian advances in this field.

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R.C.V.S. OBITUARY

Blackburn, Joseph, Captain, late R.A.V.C., Oaklands, Masham, Yorks. Graduated London, July 10th, 1913. Died July 3rd, 1951; aged 60 years.

Rogers, Harold Guinness, 2, Balliol Road, Bootle, Liverpool. Graduated Glasgow, May 22nd, 1902. Died July 2nd, 1951; aged 72 years.

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The Late Emeritus Professor William Robb, J.P. M.R.C.V.S.

AN APPRECIATION

With the passing of Professor Robb, recorded in your last issue, the links with the days of horse practice are surely breaking. It was in this sphere that he served his day and generation.

Following his father and with his brother the late Andrew Robb he carried on the old-established practice in Ward Street, Glasgow, now under the direction of his son Harry. The name of Robb was known to many as signifying the Veterinary Profession.

Although well known and actively concerned with the Clydesdale Horse Society, officiating as Veterinary Surgeon at the Stallion Show and as an examiner for the Ministry of Agriculture under the Horse Breeding Act, he had also a keen interest in the light horse as a member of the Queen's Own Glasgow Yeomanry in the days when officers supplied their own mounts; he also hunted at that time with the Renfrewshire.

His keen interest in jurisprudence led to frequent calls on his services as an expert witness.

William Robb took an active interest in the affairs of the local Division and served as President.

In a busy professional life he found time to take an interest in the Unionist Association, of the St. Rollox branch, of which he was Chairman. His appointment as a Justice of the Peace was a fitting reward for his participation in civic affairs. He held office as a manager in Bellahouston Parish Church. All work and no play, however, was not his make up and he was a keen yachtsman and bowler.

Willie Robb, as he was known to several generations of students of the Glasgow Veterinary College, commanded respect and, as one of that band of teachers during the dark days of the old college, who kept it going for posterity, he was happy to see their tenacity justified by the establishment of the Veterinary School within the University of Glasgow. His sarcastic comments were never meant unkindly and although often taken amiss, as one knew him better and especially within his family circle one quickly realised that he was often "leg pulling."

A. T.

The profession was represented at the interment in the Necropolis by Professor W. L. Weipers and Mr. R. N. C. Aitken, representing the Veterinary School, Mr. R. F. Ross, President of the West of Scotland Division, N.V.M.A., Major W. G. McGregor and Mr. A. Thomson.

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POULTRY (STOCK IMPROVEMENT) ADVISORY COMMITTEE

The Minister of Agriculture and Fisheries has reconstituted the Poultry (Stock Improvement) Advisory Committee for a further period of three years under the chairmanship of Sir Reginald Franklin, K.B.E., C.B. The re-appointment is made under the Committee's original terms of reference, *viz.*, "to keep under review the position of the stock producing and distributing sections of the poultry industry, to advise on existing measures designed to encourage the production of high quality breeding stock, and to suggest from time to time any further steps which they consider desirable to secure that end."

The other members of the Committee are *Mr. H. D. Barley, *Mr. C. Duvall Bishop, *Mr. D. T. Davies, Mr. C. J. Ephraim, *Mr. H. R. Finn, Mr. F. H. Grove, Mr. G. Guttridge, *Mr. C. Hedderwick, Mr. J. C. Holland, *Mr. J. Kemp, M.B.E., J.P., *Miss E. E. Kidd, *Mr. G. R. H. Nugent, J.P., M.P., Mr. J. E. Palmer, *Mr. Gordon Saunders, *Mr. B. Stansfield, J.P., *Mr. S. Street-Porter, O.B.E., *Mr. J. Sutton, M.B.E., *Mr. Y. Watanabe, *Major H. E. Whaley, J.P., and *Dr. W. R. Wooldridge, Ph.D., M.Sc., M.R.C.V.S.

The Secretary is Miss V. C. Lawe, Ministry of Agriculture and Fisheries, 28/32, Chester Terrace, Regent's Park, London, N.W.1.

Activities of the Committee

The following is a brief outline of the activities of the Committee during its second term of office.

The detailed work of the Committee, which met at quarterly intervals, has been carried out by sub-committees, the most important of which was the Poultry Stock Improvement Plan Sub-committee under the chairmanship of Mr. G. R. H. Nugent, M.P., to which all questions concerning the Poultry Stock Improvement Plan were referred including the responsibility for drawing up the detailed regulations of the Plan in consultation with representatives of the main organisations of the poultry industry, and after consideration of recommendations by Poultry Sub-committees of County Agricultural Executive Committees. Eleven meetings of the Sub-committee were held. Another Sub-committee, under the chairmanship of Mr. C. Hedderwick, has been responsible for the appeal procedure. Panels were formed from among members to hear appeals from breeders against decisions involving the removal of an accredited breeding station from the Poultry Stock Improvement Plan, or demotion to a lower status. During the period March, 1948, to December, 1950, these Panels heard 20 appeals (14 against removal from the Plan, six against demotion). Six of these appeals (four against removal and two against demotion) were successful.

Poultry Stock Improvement Plan.—In the spring of 1948, the Minister accepted the recommendation of the Poultry (Stock Improvement) Advisory Committee to introduce the Poultry Stock

* These members have been re-appointed.

Improvement Plan which extended the former Accredited Poultry Breeding Stations and Accredited Hatcheries Schemes. The object of the plan, which was accepted in principle by the main poultry organisations, is the improvement of breeding stock for table egg production. The Plan will be extended in due course to cover breeding stock for table poultry production.

Trial Progeny Tests.—During the 1948-49 accreditation season a few breeders undertook progeny testing on a trial basis. As a result of the experience gained in these tests, the Committee recommended that the Foundation Stock Breeders' (Progeny Tested) Grade should be put into operation as soon as it was practicable to do so.

Closing of Plan to New Entrants.—Owing to the difficulties in the supervision of the Plan caused by shortage of poultry technical staff, the greatly increased membership and also the need to set a limit to the volume of feeding-stuffs issued to accredited and probationer breeders, it became necessary in 1949 to suspend recruitment of new entrants into the Accredited Section. The Plan has continued closed except to newcomers qualifying for Breeders' Grade, who are now being admitted. The implementation of the Approved Section of the Plan has also had to be deferred.

The Committee and the Ministry are fully conscious of the detrimental effect of the closing of the Accredited Section to new members and the failure to implement the Approved Section, and one of the main activities of the Poultry Stock Improvement Plan Sub-committee during the past three years has been to explore suitable means for bringing into operation all sections of the Plan. Various proposals have been examined, including a plan for the administration of the Approved Section in close association with the leading hatcheries, but so far the Committee has not felt able to recommend the adoption of any of them.

One of the tasks confronting the reconstituted Committee will be a comprehensive review of the conditions governing membership and administration of the Plan with a view to the full re-opening of the Accredited Section to new members in 1952. Pending that review the introduction of the Foundation Stock Breeders' Grade and of registered Certification Marks for the use of members of the Plan has been deferred.

County Poultry Sub-committees.—During the course of the Committee's deliberations considerable attention has been given to the part which the Poultry Sub-committees of the County Agricultural Executive Committees might play in the local administration of the Poultry Stock Improvement Plan. In most counties panels have been formed from members of the Poultry Sub-committees to assist the County Poultry Advisory Officers in the supervision and inspection of accredited and probationary breeding stations owned by members of the Plan, and it is hoped that this procedure will be extended to all counties.

Fowl Pest.—During its term of office the Committee gave considerable attention to the question of fowl pest. The Ministry's Veterinary Officers have kept the Committee fully informed on the number of outbreaks and measures taken for the control of the disease.

Questions about the export of poultry stock and hatching eggs, and the timber and steel requirements for poultry housing and equipment, were also considered.

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DANGERS OF THE USE OF FOREIGN EGGS FOR HATCHING

The Ministry of Agriculture warns poultry keepers against attempting to rear stock from eggs that have been imported from foreign countries for human consumption. If the eggs have come from a country where fowl pest exists, there is a serious risk that any chicks hatched out will be infected and will cause outbreaks of fowl pest in this country. For this reason it is in fact illegal to use for hatching eggs that have been brought from a "prohibited country." The prohibited countries are all countries except Northern Ireland, the Republic of Ireland, Channel Islands, the Isle of Man, Australia, Canada, New Zealand, the Union of South Africa, Norway, Sweden, Holland and Denmark.

It will therefore be appreciated if those of our readers who are in a position to do so, will remind poultry keepers—even if they keep only a few chickens—that they are strongly advised to obtain any hatching eggs or chicks they require from reputable sources in this country. The use of foreign eggs of unknown origin may give them worthless or diseased stock which will cause losses not only to themselves but to their fellow poultry keepers.

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Weekly Wisdom

The conditions of our time require high levels of output of food from the land, and in attaining these we are perpetually disturbing nature's balance and coming into unexpected difficulties.—Sir John Russell.

ROYAL SOCIETY OF MEDICINE

At the annual meeting of Fellows of the Royal Society of Medicine, which was held on July 3rd, a presentation was made by the President, Lord Webb-Johnson, to Mr. Geoffrey R. Edwards, who retired from the Secretaryship of the Society after 26 years, and Mr. Edwards was elected an honorary Fellow of the Society. Other honorary Fellows who were elected and received diplomas were Professor Reynaldo Dos Santos, of Lisbon, Mr. V. Zachary Cope, Sir Thomas Fairbank, Sir Gordon Holmes, and Sir Henry Wade. Lord Webb-Johnson was re-elected President of the Society.

A greatly increased number of resignations of Fellows was shown in the report of the Council. There were 432 resignations of Fellows during 1951, compared with 139 in 1950, and 126 in 1949. The report states that the beneficial effect on the Society's finances of raising the subscription rates is already apparent, but the Society must face a certain number of resignations occasioned by the higher subscription.

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LONDON'S FOXES

The Ministry of Agriculture draws attention to the fact that, largely as a result of the increase in backyard poultry keeping, London's suburban areas have, for the past few years, been faced with a new and strange problem—the raiding fox. This animal is also a source of much trouble in the area bordering the Thames Estuary.

The Pest Departments of the County Agricultural Executive Committees, which have on their staffs men skilled in tracking and dealing with these wily marauders, have destroyed a large number in London's outer suburbs, but the task of tracking foxes in built-up areas is not an easy one. These unwanted visitors from the countryside are constantly on the move, and in carrying out their raids travel long distances.

Early information as to where they have been seen is of great importance. Valuable assistance can be given by the general public in this matter by notifying their local authority immediately they see a fox in their locality, giving precise information of the time and place in which it was seen. The local authority will, in turn, pass the information on to the appropriate county pests officer who will thus be in a position to plan his campaign swiftly and accurately. Legally, the responsibility for destroying foxes rests with the occupier of the land on which they may be harbouring, but foxes are probably the most cunning of our wild animals and destruction is a job for the expert, who has a wide knowledge of their ways.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Aberdeen.—Flushing, Cairnbulg, Rathen Parish (July 6th).

Isle of Ely.—13, Delph Street, Whittlesey (June 30th); Grange Farm, March (July 3rd); Hundred Acre Farm, Harrold Bridge, Parson Drove (July 4th).

Kent.—The Grove, Fawkham, Dartford, Kent (July 2nd); Roods Meadow Farm, Acrise, Folkestone (July 6th).

Lanarks.—Belhaven Half Acre Park, Carfin, Motherwell (June 11th).

Lancs.—26, Aughton Street, Ormskirk; "Iona," School Lane, Burscough, Ormskirk (June 11th).

Lincs (*Lindsey*).—New Millwood Farm, Owston Ferry, Doncaster (June 11th); Crown & Woolpack, Brayford Street, Lincoln (July 3rd).

Norfolk.—Pingle Lodge Farm, Upwell (July 3rd); Ferriers Allotments, High Mill Road, Cobholm, Gt. Yarmouth (July 5th); The Ship Inn, Aylesham (July 6th).

Notts.—Beechwood Farm, Ranby, Retford (July 3rd); 9, Burrows Garden, Windmill Lane, Nottingham (July 4th); Valley Farm, Kimberley Road, Nuthall; Piggery in Bullpit Road, Balderton, Newark (July 5th).

Staffs.—Groundslow Farm, Tittensor, Stone, Staffs (July 2nd).

Sussex (*E.*).—Lambourn, Plumpton, Lewes, Sussex (July 2nd).

Warwicks.—Wynyard Farm, Earlswood, Birmingham (June 30th).

Yorks (*N.R.*).—White Horse Farm, Flawith, Alne (July 6th).

Yorks (*W.R.*).—Corner Farm, Gateforth, Selby (June 11th); Raglan Street Piggeries, Thornbury, Bradford (July 3rd); Quarry Farm, Kirk Deighton, Wetherby; Willow Hall Farm, Station Road, Queensbury (July 6th).

The Vagrant Heart.—If the most recent borrower of Volume I of the Report of the 13th International Veterinary Congress will apply to the Librarian, R.C.V.S., she will be glad to return the photograph of a heart inadvertently included therein on the restoration of the volume.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

"ANAVENOL": THE CARDIOLOGICAL ASPECT

Sir,—We had carefully searched Mr. H B. Parry's original paper (*Vet. Rec.*, **62**, 500) for any mention of known cardiopathic cases in his "series of more than 100 horses," but except for one presumptive case, where "an analysis of the pre-operative history strongly suggested the presence of cardiac insufficiency at work . . . although . . . not obvious at rest," our search was fruitless. Prompted by our letter, Mr. Parry now discloses (*Vet. Rec.*, **63**, 368) that his subjects did include "a series of known cardiopathic cases." We feel that Mr. Parry might reasonably be expected to have given this not unimportant detail earlier mention, particularly as he devoted a sub-section of his paper to a description of his equine material.

We have similarly scarched Mr. Parry's recent and monumental reply to our letter for any numerical statement of the size and constitution of this "series" of cardiopathic cases, particularly as we notice that he specifies as the cardiovascular defects in question valvular incompetence *and myocardial weakness*—the very point at issue! Again our search is fruitless. All that we can find is reiteration of the commonplace text-book principles of medicine, containing nothing new, original, or informative, and such as we had supposed might properly be taken for granted. Thus: "The accurate assessment of the (cardiac) reserve is the true measure of the clinician's skill," he ponderously informs us; together with the staggering pronouncement that: "The usual clinical examination for soundness is insufficient to allow *any accurate assessment* of the horse's cardio-vascular system!" (The italics are our own.) Presumably then, in Mr. Parry's estimation, this profession has no skilled clinicians? May we correct our previous statement; here at least is something new, original and informative.

Mr. Parry concedes that organic heart-disease in the horse is extremely rare, which was and is our suggestion. But he immediately qualifies this by the italicised phrase "*as revealed by the usual techniques*," with the clear implication that *special* techniques would reveal a very different story. The kind of technique which he has in view we shall discover. He further qualifies his concession by the imputation that what he calls "deficits of normal physiological functional reserve" (whatever this is intended to mean), are in contrast "quite common" in horses. Let us examine this suggestion.

If by this he means *physiological deficits in the average reserve*, of course they are quite common—there is always a scatter about the statistical mean and roughly half of all normal animals can be expected always to fall into such a category. But as his statement stands it specifies *deviations from the normal and physiological*, which defines *sensu strictu* the abnormal and pathological. And such deviations, he imputes, are "quite common." Thus this only reaffirms under wordy camouflage his thesis that myocardiopathic weakness is of significant, even frequent, occurrence in horses, the very point of disputation. May we therefore try once more to clarify his thinking in this matter?

Whereas we, in common as we believe with most in the profession, would draw the line between the normal and the pathological heart on the basis of all the clinical evidence, Mr. Parry offers to science a completely new standard of reference—the capacity of the heart to withstand the toxic onslaught of "Anavenol." A new school of cardiological thought is opened up, wherein the only adequate basis for the assessment of cardiac sufficiency and normality is "the Anavenol test" (this alone being, on Mr. Parry's own showing, able to detect the alleged weakness). We had ourselves visualised this remarkable possibility, and had even been disposed to mention it in our first letter to illustrate the sublimely ludicrous character of the whole story. We refrained from indulging, contenting ourselves with reference to the analogy of ordeal by poison, only to find that Mr. Parry does in all seriousness, it would seem, seek to defend this extravaganza.

Really there is little point in continuing the present argument beyond this juncture. If Mr. Parry intends defining the normal and the pathological in this arbitrary way, nothing presumably can stop his so doing. May we, however, just pose the following obvious but highly pertinent questions:—

(1) On what scientific evidence does Mr. Parry base his theory that the heart-failures which he describes indicate weakness of the myocardium?

(2) By what unspecified technique has he excluded the rational expectation that they represent idiosyncratic over-susceptibility of the individual, to the admitted cardio-toxicity of the drug?

(3) Has Mr. Parry any scientific evidence to adduce that a heart with a myocardium *stronger than normal*, undergoing by reason of idiosyncrasy excessive relaxation of the atrio-ventricular ring and excessive stress, will not fail where a weaker-than-normal heart, less susceptible to this effect, will manage to survive?

(4) In default of such proof, what justification has he for presuming a positive correlation between the toxic action on the heart and the condition of the myocardium?

(5) Has Mr. Parry never heard of the *circulus in probando*—the fallacy of assuming the very thing which is unproven?

There are other aspects of the case on which we would like to question Mr. Parry's oracle, but space prohibits. Considerations of space likewise prohibit our proceeding, as we had intended, to question what is in our view an issue much more important than any toxic side-effects of "Anavenol," namely, the validity of the claim that this drug is a legitimate general anaesthetic in the first instance. This we must therefore shelve, in the hope of an opportunity of raising the question with you later.—Yours faithfully, T. N. Gold, E. O. Longley. *May 23rd*, 1951.

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THE MEAT INSPECTION REPORT

Sir,—The report of the Interdepartmental Committee on Meat Inspection is now available. To those who are in any way connected with public health arrangements, there is much food for thought within its 56 pages.

The Committee, consisting of ten men, including two veterinary surgeons, obtained written and oral evidence from various organisations and persons. Amongst the latter one finds the names of 20 eminent veterinary surgeons. With this in mind one expects a balanced report with due consideration being given to the position of medical men, veterinary surgeons and sanitary inspectors already engaged in public health administration. It is disturbing, therefore, to read paragraph 112, which recommends "that a course of theoretical and practical training should be provided to enable candidates from the butchery trade to qualify as meat inspectors: and that the Food and Drugs Act should be amended to enable such persons to act as authorised officers for the examination and seizure of meat."

Paragraph 116 is even more disturbing. It suggests:

"That the examining authorities should review the course of training for meat inspectors in consultation with the appropriate government departments and should consider the inclusion of adequate instruction in *ante-mortem* inspection, in the recognition of evidence of salmonellae infections, in making simple laboratory tests and in the interpretation of reports of more specialised laboratory examinations."

It is likely that all the recommendations of this report will be adopted. One hoped that the representatives of the veterinary profession would have protected far more adequately the interests of their profession and their colleagues, together with the high standards necessary in a public health organisation in this country. —Yours faithfully, E. F. Lewis, Department of Medicine, Royal Veterinary College, Streatley. *June 27th*, 1951.

[As one of the bodies which presented evidence, both orally and by memorandum, to the Interdepartmental Committee, the N.V.M.A. did everything in its power to establish what it deems to be the rightful and proper place of the profession in this field. The committees of the Association concerned are jointly considering the recommendations made in this report.—*Editor.*]

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"TECHNICAL JARGON"

Sir,—I find it difficult to understand some of the articles in *The Veterinary Record*. Must long words be used instead of simple phrases? Clarity in writing, surely, helps both the writer and the reader to think more clearly.

We have been trained to detect and destroy disease, therefore let us not drown our new-found wisdom in a flood of technical jargon.—Yours faithfully, J. F. Harbourne, Portal Farm, Tarporley, Cheshire. *July 2nd*, 1951.